UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,740	10/11/2005	Andreas Fricke	2002P15017WOUS	1889

7590 12/28/2007

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, NJ 08830

EXAMINER	
BARON, HENRY	
ART UNIT	**PAPER NUMBER**
2616	

MAIL DATE	DELIVERY MODE
12/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/529,740	FRICKE, ANDREAS	
	Examiner	Art Unit	
	Henry Baron	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-13* is/are rejected.

7)☐ Claim(s) ____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/11/2005 ,3/30/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 4 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Wilson et al (U.S. Patent 7058008).

3. With regards to claim 4, Wilson teaches of a method for protected transmission of a data signal via synchronous data networks comprised of subdividing the data signal into a plurality of virtually linked partial signals; and transmitting the virtually linked partial signals via a plurality of data channels, where at least one data channel more than needed is used for transmitting the data signal, (1: [0019]+ read Referring to FIG. 1, an unprotected SONET/SDH virtual concatenation link 10 i.e. virtually linked partial signals, is employed to transmit a high bandwidth client signal 12 i.e. data signal, from a component 20 acting as a source across the link to a component 22 acting as a sink where the signal is re-assembled and transmitted as another high bandwidth client signal 14. The link 10 comprises a plurality of parallel unidirectional channels or members.) where the data signal is subdivided into partial signals transported at a lower data rate and transmitted using all data channels (1: [0034+] read [e]ach channel is employed to transmit a series of virtual container, for example, VC-4 (SDH) frames) , and where if there is a problem with a data channel, the data signal is subdivided again and allocated to remaining data channels. possibly along different physical paths resulting in different propagation delays across the link. (2: [0050]+ read In the SONET/SDH non-protected scenario, if one or more of the diversely routed channels is `hit`, i.e. problem, the remaining channels can continue to carry the data.)

4. In consideration of claim 5, Wilson teaches where the partial signals or groups of partial signals or the data channels or groups of data channels are transmitted via different physical connections.(1: [0044] read [e]ach channel is employed to transmit a series of virtual container, for example, VC-4(SDH) or STS-3c (SONET) frames possibly along different physical paths i.e. connections, resulting in different propagation delays across the link.).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al (U.S. Patent 7058008), in view of Sugawara (U.S. Patent US 6021112).

7. Regarding claim 6, Wilson teaches of feedback between a source and sink in and switching in or out channels which are 'hit' (2: [0012] read [p]art of the LCAS methodology is a hand-shake signaling protocol between a source and a sink to achieve a hitless increase or decrease of the link bandwidth. It works by switching in (or out) a parallel channel at a precise point in time when the sink has confirmed the channel status back to the source that it is ready to do so. This mechanism is also used when a channel fails [obviously causing a hit indicated by the numeral 24] and must be removed from the link.

8. However, Wilson does not teach a hit or channel failure in the context of when the signal quality of an individual partial signal falls below a quality threshold value.

9. Sugawara teaches a hit or channel failure as determining when the signal quality of an individual partial signal falls below a quality threshold value. (2: [0012] read Abstract in particular for the purpose of repairing a fault which occurs in an asynchronous (PDH) subnetwork contained therein, this apparatus having a transmission alarm detection section which monitors the input PDH signal and generates a

transmission alarm signal when a degradation of the quality is detected i.e. falls below a quality threshold.).

10. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the protection transmission of data signal teachings of Wilson with the signal teachings of Sugawara.

11. In this manner, graceful failover can be proactively be achieved when the signal quality of a partial signal channel falls below a threshold allowing the link capacity adjustment scheme to redistribute the traffic load across the remaining channels.

12. Regarding claim 7, Wilson teaches the limitations of claim 5 where the partial signals or groups of partial signals or the data channels or groups of data channels are transmitted via different physical connections.

13. However, Wilson does not teach a hit or channel failure in the context of when the signal quality of an individual partial signal falls below a quality threshold value.

14. Sugawara teaches a hit or channel failure as determining when the signal quality of an individual partial signal falls below a quality threshold value. (2: [0012] read Abstract in particular for the purpose of repairing a fault which occurs in an asynchronous (PDH) subnetwork contained therein, this apparatus having a transmission alarm detection section which monitors the input PDH signal and generates a transmission alarm signal when a degradation of the quality is detected i.e. falls below a quality threshold.).

15. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the protection transmission of data signal teachings of Wilson with the signal teachings of Sugawara.

16. In this manner, graceful failover can be proactively be achieved when the signal quality of a partial signal channel falls below a threshold allowing the link capacity adjustment scheme to redistribute the traffic load across the remaining physical connections.

17. Claims 8 –10 and 12 - 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al (U.S. Patent 7058008), in view of Heuer (U.S. Patent US 6842455).

18. With regards to claim 8, Wilson teaches the limitations of claim 4, but does not teach the overall capacity of the virtually linked partial signals to be greater than that of the data signal.

19. Heuer teaches of adaptation so that the overall capacity of the virtually linked partial signals to be greater than that of the data signal. (2: [0013] read ..a method of transmitting user data over a synchronous digital communication network wherein the number of concatenated multiplex units can be adapted to the actually required bandwidth, i.e. so that the overall capacity of the virtually linked partial signals will be greater than that of the incoming data signal.).

20. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the data signal protected transmission teachings of Wilson with the partial signal capacity teachings of Heuer.

21. With such a modification, the link capacity adjustment scheme can dynamically adjust or redistribute the load of a data signal over virtually linked partial signals in the event of a hit, i.e. hard failure or if the signal quality of a partial signal channel falls below a predetermined threshold.

22. With regards to claim 9, Wilson teaches a method for protected transmission of a data signal via synchronous data networks comprised of subdividing the data signal into a plurality of virtually linked partial signals and transmitting the virtually linked partial signals via a plurality of data channels. (1: [0019]+ read Referring to FIG. 1, an unprotected SONET/SDH virtual concatenation link 10 i.e. virtually linked partial signals, is employed to transmit a high bandwidth client signal 12 i.e. data signal, from a component 20 acting as a source across the link to a component 22 acting as a sink where the signal is re-

assembled and transmitted as another high bandwidth client signal 14. The link 10 comprises a plurality of parallel unidirectional channels or members.)

23. However, Wilson does not teach of determining a number of data channels needed for transmitting the virtually linked partial signals based on characteristics of the data signal and does not teach of and transmitting the virtually linked partial signals via data channels that exceeds the determined number of data channels by at least one where the overall capacity of the virtually linked partial signals is greater than that of the data signal, and wherein all data channels are used for transmitting.

24. Heurer teaches of determining a number of data channels needed for transmitting the virtually linked partial signals based on characteristics of the data signal and of transmitting the virtually linked partial signals via data channels that exceeds the determined number of data channels by at least one where the overall capacity of the virtually linked partial signals is greater than that of the data signal, and wherein all data channels are used for transmitting. (4: [0034-0050] read The conversion into a smaller number of virtually concatenated multiplex units can also be predefined, so that at given times, for example, the full bandwidth of all multiplex units is available, while at other times, only a reduced capacity is available. For instance, a concatenation of three VC-4s can be chosen from 8:00 to 10:00 a.m. and from 4:00 to 6:00 p.m., a virtual concatenation of all four VC-4s during busy periods from 10:00 a.m. to 4:00 p.m., and a virtual concatenation of only one or two VC-4s during periods of light traffic from 6:00 p.m. to 8:00 a.m. In this way, the actually transmitted payload can be adapted to the statistical utilization of the data network. Alternatively, a dynamic adaptation according to a measured traffic volume can be performed approximately every 10 min. If a default value is used, the transfer from the IP router to the multiplexer of information as to which multiplex units are currently being used for data packets is not necessary.)

25. It would have been obvious at the time the invention was made by a person of to having ordinary skill in the art to modify the data signal protected transmission teachings of Wilson with the partial signal capacity matching teachings of Heuer.

26. With such a modification, the link capacity adjustment scheme can dynamically adjust or redistribute the load of a data signal over virtually linked partial signals dynamically allocated per characteristics of the data signal in a manner that optimally utilizes the available bandwidth.

27. With regards to claim 10, Wilson teaches where the partial signals or groups of partial signals or the data channels or groups of data channels are transmitted via different physical connections. (1: [0044] read [e]ach channel is employed to transmit a series of virtual container, for example, VC-4(SDH) or STS-3c (SONET) frames possibly along different physical paths i.e. connections, resulting in different propagation delays across the link.).

28. Regarding claim 12, Wilson in modification with Heuer teaches the limitations in claim 10 where the partial signals or groups of partial signals or the data channels or groups of data channels are transmitted via different physical connections.

29. However, Wilson in modification with Heuer does not teach a hit or channel failure in the context of when the signal quality of an individual partial signal falls below a quality threshold value.

30. Sugawara teaches a hit or channel failure as determining when the signal quality of an individual partial signal falls below a quality threshold value. (2: [0012] read Abstract in particular for the purpose of repairing a fault which occurs in an asynchronous (PDH) subnetwork contained therein, this apparatus having a transmission alarm detection section which monitors the input PDH signal and generates a transmission alarm signal when a degradation of the quality is detected i.e. falls below a quality threshold.).

31. In this manner, graceful failover can be proactively be achieved when the signal quality of a partial signal channel falls below a threshold allowing the link capacity adjustment scheme to redistribute the traffic load across the remaining physical connections.

32. Regarding claim 13, Wilson in modification with Heuer teaches the limitations in claim 9. Further, Wilson teaches if there is a problem with a data channel, the data signal is subdivided again and allocated to remaining data channels (2: [0050]+ read In the SONET/SDH non-protected scenario, if one or more of the diversely routed channels is `hit`, i.e. a problem, the remaining channels can continue to carry the data.).

33. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al (U.S. Patent 7058008), in view of Heuer (U.S. Patent US 6842455) and in further view of Sugawara (U.S. Patent US 6021112).

34. Regarding claim 11, Wilson in modification with Heuer teaches the limitations in claim 9

35. However, Wilson in modification with Heuer does not teach a hit or channel failure in the context of when the signal quality of an individual partial signal falls below a quality threshold value.

36. Sugawara teaches a hit or channel failure as determining when the signal quality of an individual partial signal falls below a quality threshold value. (2: [0012] read Abstract in particular for the purpose of repairing a fault which occurs in an asynchronous (PDH) subnetwork contained therein, this apparatus having a transmission alarm detection section which monitors the input PDH signal and generates a transmission alarm signal when a degradation of the quality is detected i.e. falls below a quality threshold.).

37. In this manner, graceful failover can be proactively be achieved when the signal quality of a partial signal channel falls below a threshold allowing the link capacity adjustment scheme to redistribute the traffic load across the remaining channels.

Conclusion

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Baron whose telephone number is (571) 270-1748. The examiner can normally be reached on 7:30 AM to 5:00 PM E.S.T. Monday to Friday.

39. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

40. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HB

Seema S. Rao 12/26/07
SEEMA S. RAO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600